



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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October 28, 2016

Carly Filler
Deerfield AD 1 LLC
20 Walnut Street, Suite 308
Wellesley, MA 02481

RE: Deerfield
Transmittal No.: X269449
Application No.: WE-16-012
Class: *SM50*
FMF No.: 561888
AIR QUALITY PLAN APPROVAL

Dear Ms. Filler:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Air and Waste, has reviewed your Non-major Comprehensive Plan Application ("Application") listed above. This Application concerns the proposed construction and operation of an anaerobic digester system to fuel a combined heat and power (CHP) generator set and two (2) associated back-up flares at Barway Farm Organic Recyclery located at 188 Mill Village Road in Deerfield, Massachusetts ("Facility"). The Application bears the seal and signature of Michael T. Lannan, Massachusetts Registered Professional Engineer Number 45607.

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control" regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-O, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

This Plan Approval supersedes Plan Approval #WE-14-025 dated March 6, 2015. Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

Deerfield AD 1 LLC (formerly Barway Biogas, LLC) is a biogas producer located at Barway Farm, a dairy operation in Deerfield. The biogas producer originally obtained Plan Approval #WE-14-025 dated March 6, 2015 for the construction and operation of an anaerobic digester system to fuel a 500 kilowatt (kW) combined heat and power (CHP) generator set and one (1) associated back-up flare. Through this current Plan Approval application, Deerfield AD 1 LLC is proposing to increase the engine size of the CHP from 500 kW to one (1) megawatt (MW) and add a second back-up flare. In addition, the receiving tank (EU1) and anaerobic digester (EU2) are larger than that originally proposed in Plan Approval #WE-14-025 and an additional digestate storage tank has been added. The anaerobic digester system design is by CH4 Biogas LLC. Biogas production is estimated to be 280 cubic feet per minute (cfm).

The Barway Farm is owned by the Melnik family. It has approximately 250 milking cows and 600 acres of land for crop production. The “Facility” has been named the Barway Farm Organic Recyclery. Deerfield AD 1 LLC (the “Permittee”) is owned by Vanguard Holdings, LLC. The Permittee has secured a contract to sell electricity through net metering to the Eversource energy company.

Dairy manure produced at Barway Farm as well as off-farm feedstocks such as source separated organics (SSO) will be anaerobically digested to produce biogas. A draft Recycling, Composting or Conversion (RCC) permit from MassDEP Solid Waste Management limits the amount of organic material accepted to 150 tons per day, averaged over a calendar year, and a maximum of 375 tons per day on any given calendar day.

The effluent from the digester (digestate) will be processed through a screw press to produce bedding material for use in the dairy barns. The remaining liquid digestate will be land applied as a nutrient-rich fertilizer at Barway Farm or other nearby farms. Bedding will be dewatered and stored in a new dedicated building. The liquid digestate will be stored in the Facility’s three (3) open air digestate storage tanks until it is land applied (2 existing 1,000,000 gallon and 1 new 2,057,500 gallon).

SCADA System

The Supervisory Control and Data Acquisition (SCADA) system will continuously monitor, record, and control many of the facility’s process control parameters. Operators will have the capability to remotely access the entire control system via the internet. The system will page service technicians in the case of critical system warning messages. Tables 3 (Monitoring & Testing Requirements) and 4 (Recordkeeping Requirements) designate the emission units that will be included in the SCADA system.

Receiving Tank

The dairy barn at Barway Farm is cleaned using an alley scraper, scraping manure into a covered concrete holding pit at the end of the barn. Several times per day, dairy manure will be pumped to the anaerobic digester from the holding pit. The manure in the holding pit will be periodically mixed to prevent the settling and packing of solids. The use of a holding pit is a regular farm practice in Massachusetts and, as such, this practice is protected under the *Massachusetts Right to Farm By-Law, Article 97 of the Articles of Amendment*.

Off farm feedstocks will be delivered to the digester site and stored in the 158,500 gallon receiving tank (hydrolyzer) until they are fed to the anaerobic digester. The hydrolyzer is designed to operate at 104°F in order to promote the hydrolysis of feedstocks in the tank. The contents of the Hydrolyzer will be heated through a heat recovery loop, generated through biogas combustion in the CHP. Hydrolysis creates acid bacteria which help break down the feedstocks, creating volatile fatty acids and acetic acids which are then transferred to the anaerobic digester for use in creating biogas. Several times per day, material will be pumped via piping from the receiving tank into the anaerobic digester.

Trucks delivering off farm feedstocks will transfer the material to the receiving tank during regular business hours. Liquid deliveries will be pumped to the receiving tank via an air and liquid tight tube and camlock with bar-screen while solid deliveries are transferred to the receiving tank through a lid/chute which opens and closes for delivery of material. The receiving station will have wash-down equipment so that the delivery truck and delivery area can be cleaned (if required) after material is delivered. This wash water will be routed to the Receiving Tank to prevent odors.

Odor Control for the Receiving Tank

Odorous gasses within the headspace of the hydrolyzer will first move through a moisture removal element prior to entering a carbon filter. After the moisture separation, the displaced air will travel through a Pelletized Activated Carbon (PAC) Media impregnated with potassium hydroxide for the desulphurization of gases and the removal of acidic contaminants such as hydrogen sulfide (H₂S), hydrogen chloride, and mercaptans. The inlet air to the PAC Media uses a plenum to ensure even air distribution across the bed. The PAC Media works to remove odorous pollutants from the gas by adsorption. The speed of the odor control blower will be set for 400 cfm at all times, whether the hydrolyzer lid is open for deliveries of material or is closed. The negative pressure created by the blower fan will prevent odorous gas from escaping the tank and instead draw it through the PAC. The speed of the blower fan will allow for 16 air changes per hour.

A breakthrough curve will be established for the PAC Media, which is expected to last about 12 months, unless sniff tests or sorbent tube readings indicate that the material is no longer effective and needs replacing before this time interval.

The carbon vessel (or ductwork) will have sample ports that allow both “sniff tests” and monitoring of hydrogen sulfide as a surrogate for odor. These sniff ports will be measured weekly during the first carbon cycle for odor via “sniffing” and the surrogate via sorbent tubes. As the system approaches breakthrough, the carbon change-out will be scheduled. Once the first carbon breakthrough has been determined, the second carbon cycle can be limited to sniff tests for the first 50% of the expected life cycle. Thereafter, the weekly monitoring can be limited to sniff tests for the first 75% of the expected life cycle.

Anaerobic Digester

A 660,430 gallon, mesophilic (104°F) completely mixed anaerobic digester (AD) will process all of the farm manure and the off-farm feedstocks, producing biogas and digestate. The tank will be made of concrete and will have a flexible membrane roof that will capture the biogas. The membrane will be essentially impermeable to the biogas.

In the AD, methanogenic bacteria convert acids into biogas. On a daily basis, approximately 15,000 yd³ of biogas will be produced (280 cfm). Biogas is typically about 60% methane and 40% carbon dioxide. At 60% methane content, biogas has a heating value of approximately 607 British thermal units per standard cubic foot of gas (Btu/scf).

A byproduct of biogas production is hydrogen sulfide gas (H₂S), which is corrosive to equipment and, through combustion, can convert to sulfur dioxide (SO₂), a criteria air pollutant. The facility will implement two methods to reduce H₂S levels of the biogas to 200 ppm or less:

- The digester roof is designed with a wooden framework that creates a headspace and surface area for aerobic bacteria to colonize. The process involves the injection of small amounts of air into the digester headspace which allows aerobic bacteria to biologically convert H₂S into elemental sulfur and sulfates which precipitate into the digestate. Oxygen levels in the headspace will be maintained at 0.2 to 4%.
- Hydrogen sulfide levels entering the CHP engine will be continuously monitored and recorded by a SCADA system. When the H₂S concentration reaches a pre-determined level, ferric chloride or ferric hydroxide will be added to the anaerobic digester at the correct dosage to convert the hydrogen sulfide to ferric sulfate which is precipitated into the digestate.¹

¹ The Permittee will develop a final Standard Operation and Maintenance Procedures (SOMP) for the H₂S control system of Emission Unit 1(EU1) within 120 days of startup of the anaerobic digester system (see Table 6, Provision 6). The SOMP shall describe the final set points for the initiation of the ferric chloride/hydroxide dosing process. It shall also describe the conditions under which the digester will be shut down as well as describe the process of emergency shutdown.

Like the receiving tank, the heat required for AD process will be recovered from the CHP engine. The biogas leaving the AD will be cooled with a mechanical chiller before being routed to the CHP engine. The biogas will be continuously monitored. Hourly averaged methane, carbon dioxide, oxygen and hydrogen sulfide concentrations will be logged using the SCADA system.

Combined Heat and Power Generator Set

The proposed 1800 RPM Dresser-Rand Guascor HGM 560, IC-G-B-56-110e CHP engine has a maximum heat input capacity of 8.75 MMBtu/hr and is capable of combusting approximately 314 standard cubic feet per minute at full load. The CHP gen-set will be limited to an electrical output capacity of 1,000 kW (280 cfm maximum). Exit stack properties for the CHP engine are given in Table 7.

The exhaust gas will pass through a DCL America Inc. catalytic converter model MQL DC68-16 CC (or equivalent) that will reduce carbon monoxide emissions by a minimum of 95% and reduce formaldehyde emissions by 85% (by weight).

Catalyst blinding may occur due to the presence of siloxanes in the biogas. The catalyst will be checked for efficiency on a quarterly basis using an E Instruments model E1500 (or equivalent) hand-held combustion gas analyzer. The gas analyzer will be capable of storing data that can be down-loaded and integrated into the recordkeeping system and used to track effectiveness of the catalyst. In addition, the backpressure across the engine system will be monitored daily. If elevated pressures are traced back to the catalyst, the catalyst will be checked for control efficiency and will be replaced as necessary. The facility will follow maintenance requirements and conduct initial and periodic performance testing on the CHP engine.

Back-up Flare

Two identical LSC Environmental Products, LLC CF-10 biogas flares will be used during start-up, down-time, and maintenance of the engine. They will also be used to reduce digester pressure in the event that the engine is insufficient and biogas cannot be temporarily stored in the digester membrane.

Each flare is designed to flare 140 cfm of biogas. Therefore, two flares are needed to control the total expected biogas production. The design of the flare meets the specifications of 40 CFR 60.18, *General control device and work practice requirements*, and so is expected to have a 98% VOC destruction efficiency if operated and maintained as recommended by the manufacturer. Flare specifications are listed in Table 1.

The selected flares have a battery powered spark ignition with solar chargers and will operate regardless of power outages. A thermocouple on each flare will monitor the temperature of the flame when biogas is routed to it. The thermocouple will be connected to the SCADA system to

monitor and record the operating parameters as well as send an alarm if the temperature is not sufficient for combustion while biogas is being routed to the back-up flare.

At standard operating conditions, the operating pressure in the anaerobic digester will typically be 2" (inches) of water column at 104°F. Pressure within the digester will be monitored and recorded using the SCADA system. If the digester reaches 4" of water column, the first back-up flare will engage to flare excess biogas until the pressure drops below 4" of water column. If the digester reaches 4.5" of water column, the second back-up flare will engage to flare excess biogas until the pressure drops below 4.5" of water column. Should the digester pressure increase to 5" of water column, the operator of the digester will receive a high pressure audible alarm warning in which case all digester input processes are automatically stopped until the digester pressure returns to normal operating conditions. In the event that the digester pressure continues to rise after feeding is stopped, an emergency pressure relief valve will decrease the pressure in the digester.

Air Dispersion Modeling

This section documents the results from an ambient air quality dispersion modeling analysis for the Deerfield AD 1 LLC anaerobic digester (AD) biogas-to-energy combustion equipment to demonstrate that the predicted air quality impacts will comply with the National Ambient Air Quality Standards (NAAQS) and Massachusetts Ambient Air Toxic Guidelines 24-hr Threshold Effects Exposure Limit (TEL) and the annual Ambient Air Limit (AAL) for formaldehyde. The air quality analysis was reviewed by MassDEP. The following is a summary of the MassDEP's analysis of Deerfield AD 1 LLC's air dispersion modeling.

The air quality impact analysis was based on a scenario of simultaneously operating the 1.0 MW CHP engine at roughly 75% load with two back-up flares, both operating at maximum capacity. This is a conservative operational scenario as the flares will not be receiving maximum gas flow when the engine is running. The dispersion model predicted maximum concentrations of CO, NO₂, PM_{2.5}, PM₁₀ and SO₂, along with formaldehyde, in the area surrounding the farm. These predicted concentrations, except for formaldehyde, were then added to representative background concentrations and compared to the NAAQS. Model-predicted concentrations of formaldehyde are compared directly to the TEL/AAL.

No nearby facilities with significant emissions of criteria pollutants are located in the area directly surrounding the farm in Deerfield, so it was not necessary to include offsite sources in the modeling analysis.

Type of Model

The air quality modeling analysis was performed with the latest version (15181) of the United States Environmental Protection Agency (USEPA) AERMOD dispersion model with USEPA's recommended regulatory default options and rural dispersion coefficients. The modeling was run using a meteorological data-set derived from utilizing AERMET (15181) with default

options. Terrain elevations for receptors and structures were obtained from the USGS National Elevation Dataset (NED) and processed using the AERMAP (11103) preprocessor.

Modeling Results

The following table presents the modeling results submitted in support of the non-Major Comprehensive Plan Approval Application. These results are fully compliant with the criteria pollutant NAAQS and formaldehyde TEL/AAL guidelines. Except where noted, the total impact represents the combined maximum model-predicted concentrations from the engine and two flares at the Barway farm plus background levels.

Pollutant	Averaging Period	Total Impact	NAAQS/TEL/AAL
		($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)
NO ₂	1-hr	89.9	188
	Annual	7.3	100
SO ₂	1-hr	126.7	196
PM ₁₀	24-hr	23.1	150
PM _{2.5}	24-hr	19.8	35
	Annual	7.5	12
CO	1-hr	3,037	40,000
	8-hr	1,967	10,000
Formaldehyde	24-hr	0.55	2.0
	Annual	0.06	0.08

Note: Total impact equals modeled-predicted concentrations plus measured background concentrations, except for formaldehyde. Background air quality concentrations of formaldehyde were not added to model-predicted concentrations because no air toxic monitoring data was available to use in the analysis. This is acceptable practice for this type of air toxic modeling analysis.

$\mu\text{g}/\text{m}^3$ = microgram per cubic meter

This demonstrates that the Deerfield AD 1 LLC anaerobic biogas-to-energy combustion equipment will neither cause nor contribute to a condition of air pollution with respect to its criteria pollutant and formaldehyde emissions.

Conclusion

Future air emissions from the Deerfield AD 1 LLC biogas-to-energy project equipment with control/emission rates meeting MassDEP best available control technology (BACT) requirements and stack heights as specified will not exceed USEPA NAAQS or MassDEP TEL/AAL guidelines for formaldehyde as shown by the analysis of the air dispersion modeling provided.

Sound Monitoring and Modeling

A sound monitoring and modeling study was conducted to predict compliance with the MassDEP noise policy. All incremental changes in existing sound levels were found to be below the 10-dBA incremental limit allowed by the MassDEP noise policy at all offsite receptors.

The CHP engine will be delivered and housed in a pre-fabricated, acoustically-treated enclosure. The stack will be equipped with an Extreme Grade silencer manufactured by GT Exhaust (or equivalent) to reduce exhaust sound levels. To verify that these noise mitigation measures are effective, the Permittee will conduct a noise survey in accordance with MassDEP guidelines (Table 3, Provision 26). The noise survey will take place during daytime and nighttime operations of the engine/generator set, one flare, and the AD equipment.

Applicable Regulatory Requirements

In addition to being subject to the BACT requirements of 310 CMR 7.02(8)(a)2, the proposed operations are subject to the visible emission requirements of 310 CMR 7.06, the dust, odor, construction and demolition requirements of 310 CMR 7.09 and the noise reduction requirements of 310 CMR 7.10.

The Permittee is subject to 310 CMR 7.71, Reporting of Greenhouse Gas Emissions, including those from biogenic sources.

The Permittee has stated that the facility may be subject to 40 CFR Part 63, Subpart ZZZZ, the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines and 40 CFR Part 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. Since MassDEP has not accepted delegation for Subpart JJJJ and Subpart ZZZZ for sources which are not subject to 310 CMR Appendix C, the Permittee is advised to consult with EPA Region 1 at 5 Post Office Square, Suite 100, Boston, MA 02109-3912, telephone: (617)918-1111. Other applicable requirements may include notification, record keeping, and reporting requirements.

Best Available Control Technology

The anaerobic digester system, CHP generator set, and associated biogas back-up flares will operate in accordance with MassDEP guidance entitled *Top Case Best Available Control Technology (BACT) Guidance for air emissions from digester-gas-to-electricity operations at Massachusetts farms* (dated February 24, 2016) with the exception of PM_{10/2.5} as reflected in Table 2, Operational, Production, and Emission Limitations. By complying with the emission limits contained in the MassDEP guidance, the facility will satisfy the BACT requirements of 310 CMR 7.02(8)(a)2..

2. EMISSION UNIT IDENTIFICATION

Each Emission Unit (“EU”) identified in Table 1 is subject to and regulated by this Plan Approval:

Table 1			
EU	Description	Design Capacity	Pollution Control Device (PCD)
1	Receiving Tank (Hydrolyzer)	<ul style="list-style-type: none"> 158,500 gallon 	H ₂ S/Odor Control (or equivalent): <ul style="list-style-type: none"> Continental Carbon Deep Bed Scrubber Model # CCGVPC500IPHM: Contained within VPC 500 aluminum media vessel constructed out of 11 gauge aluminum Cincinnati Pressure Blower Model PB10A, Arr. #4, Direct Driven (or equivalent) Camfil ECO Moisture Separator and Housing ≈ 495 lbs. of Continental Carbon Group Model # CC-IPH Pelletized Impregnated Activated Carbon media (or equivalent)
2	Anaerobic Digester	<ul style="list-style-type: none"> 660,430 gallon 	H ₂ S Control: <ul style="list-style-type: none"> Air injection in headspace of EU Ferric chloride or ferric hydroxide addition, as necessary

Table 1			
EU	Description	Design Capacity	Pollution Control Device (PCD)
3	Dresser-Rand Guascor HGM 560 Model IC-G-B-56-110 CHP generator set	<ul style="list-style-type: none"> 8.75 MMBtu/hr maximum heat input 	CO control: <ul style="list-style-type: none"> DCL America, Inc. MQL DC68-16 CC oxidation catalyst Noise: <ul style="list-style-type: none"> GT Exhaust Systems, Inc. extreme grade silencer; Acoustical enclosure
4	LSC Environmental Products, LLC CF-10 (or equivalent) biogas flare	<ul style="list-style-type: none"> 5.4 MMBtu/hr heat input capacity; 	N/A
5	Three (3) - Open air digestate storage tanks	<ul style="list-style-type: none"> 2 - 1,000,000 gallon 1 – 2,057,500 gallon 	N/A
6	LSC Environmental Products, LLC CF-10 (or equivalent) biogas flare	<ul style="list-style-type: none"> 5.4 MMBtu/hr heat input capacity 	N/A

Table 1 Key:

EU = emission unit number
 CHP = combined heat and power
 CO = carbon monoxide
 N/A = not applicable

MMBtu/hr = million British thermal units per hour

≈ = approximate
 H₂S = hydrogen sulfide
 lbs = pounds

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

Table 2			
EU	Operational / Production Limit	Air Contaminant	Emission Limit^{a, e}
3	1. Nominal rated electrical power output \leq 1,000 kW	NO _x	0.60 g/bhp-hr 7.7 TPY 1.5 TPM
		CO	0.13 g/bhp-hr 1.6 TPY 0.32 TPM Designed to meet 95% carbon monoxide control efficiency using an oxidation catalyst
		SO ₂ ^d	0.20 g/bhp-hr 2.5 TPY 0.46 TPM Daily average concentration of H ₂ S shall be less than or equal to 200 ppm _v entering the CHP engine
		PM _{10/2.5}	0.091 g/bhp-hr ^f 1.2 TPY 0.23TPM
		HAP _{single} (formaldehyde)	0.15 g/bhp-hr ^f 0.33 TPY 0.06 TPM Designed to meet 85% formaldehyde control efficiency using an oxidation catalyst
		Opacity ²	< 5%, EXCEPT 5 TO < 10% FOR \leq 2 MINUTES DURING ANY ONE HOUR
		Smoke	310 CMR 7.06(1)(a)
4, 6	2. 98% hydrocarbon destruction. 3. \leq 140 scfm biogas flow to each flare	NO _x	0.37 lbs/hr;
		CO	1.7 lbs/hr;
		VOC	3.11 lbs/hr;
		PM _{10/2.5}	0.07 lbs/hr;

Table 2			
EU	Operational / Production Limit	Air Contaminant	Emission Limit^{a, e}
4, 6		SO ₂ ^d	0.30 lb/hr; Daily average concentration of H ₂ S shall be less than or equal to 200 ppm _v entering each back-up flare.
		Opacity ^b	< 5%, EXCEPT 5 TO < 10% FOR ≤ 2 MINUTES DURING ANY ONE HOUR
		Smoke	310 CMR 7.06(1)(a)

Table 2 Key:

EU = Emission Unit Number
H₂S = Hydrogen sulfide
CO = Carbon Monoxide
NO_x = Nitrogen Oxides
CO₂ = Carbon Dioxide
SO₂ = Sulfur Dioxide
lbs/hr = pounds per hour
TPM = tons per month
TPY = tons per year
% = percent

scfm = standard cubic feet per minute
ppm_v = Part per million by volume
CHP = combined heat and power
≤ = less than or equal to
PM_{total} = Total Particulate Matter including PM₁₀ and PM_{2.5}
PM₁₀ = Particulate matter less than or equal to 10 microns in diameter
PM_{2.5} = Particulate matter less than or equal to 2.5 microns in diameter
g/bhp-hr = grams per brake horse power hour
kW = kilowatt
HAP_{single} = single hazardous air pollutant

Table 2 Notes

- NO_x per engine manufacturer supplied emission rate. Engine CO per emission testing at Jordan Farm January 22, 2015 with 95% control by oxidation catalyst. Flare VOC emission limit based on United States Environmental Protection Agency AP 42 emission factors. Flare PM emission limit based on the Hadley AD 1, LLC Plan Approval #NE-13-024 dated 12/22/2015. Engine and flare: CO₂ and SO₂ emission factors per stoichiometric calculation.
- Opacity means the characteristic of matter which renders it capable of interfering with the transmission of rays of light and causes a degree of obscuration of an observer's view.
- These emission limitations shall apply to all engine/generator loads. Compliance with these emission limitations shall be determined based on one-hour averages with the exception of SO₂ which shall be averaged over 24 hours. Emission limits are based upon an engine brake horsepower (bhp) of 1,341, a maximum flare fuel flow rate of 140 scfm, and biogas containing 607 British thermal units per standard cubic foot.
- SO₂ emissions are conservatively based upon complete oxidation of the inlet H₂S concentrations.
- To calculate the amount of a consecutive 12 month rolling period take the current calendar month amount and add it to the previous 11 calendar months total amount.
- This emission limit is based on limited engine testing data for PM and formaldehyde emissions. The final emission limit will take into consideration results of engine emission testing per Table 3, Provision 14. The greatest emission rate of three (3) averaged runs will be selected and scaled up by approximately 10%. The newly determined emission limit will be added to a revised plan approval and will account for variations in biogas heat content and will provide general operational flexibility.

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

Table 3	
EU	Monitoring and Testing Requirements
1	1. The Permittee shall monitor the following: <ul style="list-style-type: none"> a. date and time of each delivery to the Receiving Tank; b. confirmation that the blower fan is in operation; c. confirmation that the operator has been trained on the proper unloading procedures and the use of the activated carbon filter system.
	2. The Permittee shall at all times monitor EU1 using a video device to secure against unauthorized deliveries by untrained operators. Plans shall be included in the facility's SOMP document (Table 6, Provision 6).
	3. The Permittee shall install sampling ports at the inlet and outlet of the Continental Carbon Deep Bed Scrubber Model CCGVPC500IPHM (or equivalent) activated carbon filter.
	4. The Permittee shall monitor the Continental Carbon Deep Bed Scrubber Model CCGVPC500IPHM (or equivalent) activated carbon filter for breakthrough: <ul style="list-style-type: none"> a. First cycle - weekly using a sorbent tube to establish a breakthrough curve at which time the media shall be replaced; b. Second cycle: weekly "sniff tests" shall be conducted until 50% of the expected life cycle has been reached. Then sorbent tube monitoring to generate a second breakthrough curve shall be conducted weekly; c. After two (2) breakthrough cycles, weekly monitoring can be limited to sniff tests for the first 75% of the expected life cycle, with sorbent tube monitoring thereafter.
	5. The Permittee shall install new CC-IPH Pelletized Impregnated Carbon Media (or equivalent) when H ₂ S breakthrough has occurred. Breakthrough shall be when the ratio of the H ₂ S concentration of the gas stream leaving the filter unit to the concentration in the feed is equal to 0.05 to 0.10.
	6. The Permittee shall monitor the downtime of the system due to malfunction and/or maintenance delays.
2	7. The Permittee shall at all times that the subject emission unit operates, continuously monitor the temperature and pressure within the anaerobic digester. An exception is made for periods of calibration checks, zero and span adjustments, and preventive maintenance on the monitoring equipment. Monitoring shall be averaged over an hourly block basis.
	8. The Permittee shall obtain and record the data required in Provision 7 above using a data logger connected to a SCADA system for at least 90% of the hours per calendar quarter that the subject emission unit operates, except for periods of calibration checks, zero and span adjustments, and preventive maintenance.
	9. In the event that the H ₂ S analyzer is inoperable, the Permittee shall monitor the H ₂ S concentration (ppm by volume) at the outlet of EU2 using a sorbent tube on a daily basis.

Table 3	
EU	Monitoring and Testing Requirements
2	10. The Permittee shall install an emergency pressure relief valve to activate if the pressure within EU2 reaches 5 inches of water column. An audible and visual alarm shall alert the operator of the elevated pressure event.
	11. In the event that the emergency pressure relief valve is activated, the Permittee shall verify using audio-visual-olfactory inspection methods that the valve has reseated and is functioning properly. The emergency pressure relief valve shall be thoroughly inspected within 24 hours.
3	12. To document compliance with the emission limitations contained in Table 2 above, the Permittee shall at all times that the subject emission unit operates, monitor the biogas at the outlet of EU2 leading to EU3. With the exception for periods of calibration checks, zero and span adjustments, and preventive maintenance, the following shall be continuously monitored and averaged over an hourly block basis: <ul style="list-style-type: none"> a. Methane content (% by volume); b. The maximum, minimum, and average H₂S concentrations (in ppm by volume); c. Oxygen concentration (% by volume); and d. Carbon dioxide concentration (% by volume).
	13. The Permittee shall obtain and record the data required in Provision 12 above using a data logger connected to a SCADA system for at least 90% of the hours per calendar quarter that the subject emission unit operates, except for periods of calibration checks, zero and span adjustments, and preventive maintenance.
	14. The Permittee shall conduct emissions testing for H ₂ S, NO _x , CO, PM _{10/2.5} , SO ₂ , CO ₂ , and formaldehyde within 180 days of the commencement of continuous operation and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance. All compliance testing shall be conducted in accordance with the test methods and procedures set forth in 310 CMR 7.13, 40 CFR 60, Appendix A and 40 CFR 60.4244. All compliance testing shall be scheduled with MassDEP personnel at a mutually agreeable date and time. The Permittee shall submit a test protocol for the required emission test for review and MassDEP approval at least 30 days prior to the anticipated date of testing.
	15. For compliance testing purposes, the Permittee shall construct EU3 so as to accommodate the emissions testing requirements of 310 CMR 7.13 and procedures of 40 CFR Part 60, Appendix A and 40 CFR 60.4244. The two (2) inlet and two (2) outlet sampling ports shall be located at a minimum of two duct diameters upstream and eight duct diameters downstream of any flow disturbance. The corresponding sampling ports shall be 90 degrees apart from each other. Any variation in sampling port position requires MassDEP approval.
	16. To document compliance status with the emission limitations contained in Table 2 above, the Permittee shall continuously monitor the following using a data logger connected to a SCADA system. The following shall be continuously monitored: <ul style="list-style-type: none"> a. the biogas consumption of the CHP engine (scfm); b. the number of hours of operation of the CHP engine (per monthly and 12 consecutive month periods) through a non-resettable hour meter;

Table 3	
EU	Monitoring and Testing Requirements
3	17. The Permittee shall obtain and record the data required in Provision 16 above using a data logger connected to a SCADA system for at least 90% of the hours per calendar quarter that the subject emission unit operates, except for periods of calibration checks, zero and span adjustments, and preventive maintenance.
	18. The Permittee shall monitor the backpressure of the engine system daily and if there is an elevated backpressure traced to the oxidation catalyst, the Permittee will determine if catalyst wash or replacement is necessary.
	19. The Permittee shall install test ports at the inlet and outlet of the DCL America, Inc. MQL DC68-16 CC (or equivalent) oxidation catalyst to accommodate an E Instruments model E1500 (or equivalent) handheld combustion gas analyzer.
	20. The Permittee shall test the DCL America, Inc. MQL DC68-16 CC (or equivalent) catalytic oxidizer efficiency using a properly calibrated E Instruments model E1500 (or equivalent) handheld combustion gas analyzer on a quarterly basis, approximately 90 days apart.
	21. If and when MassDEP requires it, the Permittee shall conduct opacity (40 CFR 60 Appendix A, Method 9) and/or smoke observations (40 CFR 60 Appendix A, Method 22) to determine compliance with the visible emission limits stated in Table 2.
4, 6	22. The Permittee shall monitor the following using a data logger connected to a SCADA system. The following shall be continuously monitored and averaged over an hourly block basis: <ul style="list-style-type: none"> a. flow rate of biogas to the flare; and b. temperature of the flare while in operation.
	23. The Permittee shall monitor the following using a data logger connected to a SCADA system. The following shall be continuously monitored: <ul style="list-style-type: none"> a. flare run time in hours; and b. biogas consumption.
	24. The Permittee shall obtain and record the data required in Provisions 22 and 23 above using a data logger connected to a SCADA system for at least 90% of the hours per calendar quarter that the subject emission unit operates, except for periods of calibration checks, zero and span adjustments, and preventive maintenance.
	25. The Permittee shall install a temperature monitor on each flare. The monitors shall be connected to the SCADA system and include an audible alarm to alert the operator of the absence of a flame while biogas is routed to the flare.
3, 4, 6	26. The Permittee shall conduct a sound survey during daytime and nighttime operations in accordance with MassDEP guidelines, to demonstrate that the sound impacts from the operation of the EUs are in compliance with Regulation 310 CMR 7.10 and the Bureau of Waste Prevention's Noise Policy No. 90-001. The Permittee shall provide a sound survey protocol for MassDEP review and approval at least 30 days prior to the anticipated date of testing. The survey shall be conducted within 180 days of the commencement of continuous operation of EU3.

Table 3	
EU	Monitoring and Testing Requirements
Facility-wide	27. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	28. The Permittee shall conduct additional emissions testing on the subject units if and when MassDEP deems it necessary as per 310 CMR 7.13 – Stack Testing. All emissions testing shall be performed in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13.
	29. In accordance with 310 CMR 7.71(1), the Permittee shall establish and maintain data systems or record keeping practices (e.g. fuel use records, SF ₆ usage documentation, Continuous Emissions Monitoring System) for greenhouse gas emissions to ensure compliance with the reporting provisions of M.G.L. c. 21N, the Climate Protection and Green Economy Act, St. 2008, c. 298, § 6. (State Only Requirement) ¹

Table 3 Key:

EU = Emission Unit Number	CHP = combined heat and power
VOC = Volatile Organic Compounds	kW = kilowatt
CO = Carbon Monoxide	% = percent
NO _x = Nitrogen Oxides	CFR = Code of Federal Regulations
CO ₂ = Carbon Dioxide	WERO = Western Regional Office
H ₂ S = Hydrogen sulfide	SCADA = supervisory control and data acquisition system
SO ₂ = Sulfur Dioxide	USEPA = United States Environmental Protection Agency
MassDEP = Massachusetts Department of Environmental Protection	CMR = Code of Massachusetts Regulations
SOMP = Standard Operating and Maintenance Procedure	
PM _{total} = total particulate matter	

Table 3 Notes:

1. Greenhouse Gas means any chemical or physical substance that is emitted into the air and that MassDEP may reasonably anticipate will cause or contribute to climate change including, but not limited to: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs).

Table 4	
EU	Record Keeping Requirements
1	<p>1. The Permittee shall record the following:</p> <ul style="list-style-type: none"> a. date and time of each delivery to the Receiving Tank; b. confirmation that the blower fan was in operation; c. confirmation that the operator has been trained on the proper unloading procedures and the use of the activated carbon filter system. <p>This information shall be recorded in a logbook, or similar record keeping system, that shall be maintained near EU1. Each delivery entry shall be initialed by the operator.</p>
	<p>2. The Permittee shall maintain onsite documentation of:</p> <ul style="list-style-type: none"> a. Weekly records of the “sniff test” results, as applicable; b. weekly records of the H₂S sorbent tube testing, as applicable, including the results of sorbent tube analysis; c. weekly records of the breakthrough calculation made per Table 3, Provision 5, as applicable; d. date of activated carbon media replacement; e. breakthrough curve for the Continental Carbon Deep Bed Scrubber Model CCGVPC500IPHM (or equivalent) activated carbon filter. f. total downtime of the system due to malfunction and/or maintenance delays.

Table 4	
EU	Record Keeping Requirements
2	3. The Permittee shall maintain onsite records for each time the ferric chloride/ferric hydroxide system for H ₂ S control is implemented including but not limited to the date and time.
	4. The Permittee shall maintain onsite records of any biogas releases to atmosphere including the date, time, location, duration of, and estimated volume (scf) of the release.
	5. In the event that the emergency pressure relief valve is activated, the Permittee shall document/record that the valve was inspected and is functioning properly. Records, at a minimum, shall include: <ul style="list-style-type: none"> a. Date and time emergency relief valve was activated; b. Operational reason for the activation of the emergency relief valve; c. Date and time of the follow-up inspection; d. Results of inspection including any repairs made e. Any operational change(s) put in place to avoid a future occurrence.
	6. The Permittee shall record, using the SCADA system, the temperature and pressure within the anaerobic digester, which shall be averaged over an hourly block basis.
3	7. At the outlet of EU2 leading to EU3, using the SCADA system, the Permittee shall maintain onsite records of the following parameters which have been averaged over an hourly block average: <ul style="list-style-type: none"> a. Methane content (% by volume); b. The maximum, minimum, and average H₂S concentrations (in ppm by volume); c. Oxygen concentration (% by volume); and d. Carbon dioxide concentration (% by volume).
	8. The Permittee shall, in the event that the SCADA system malfunctions, keep a daily log of the H ₂ S content (ppm by volume) of the gas exiting EU2 and leading to EU3 determined using a sorbent tube.
	9. The Permittee shall, on a quarterly basis, record the control efficiency of the oxidation catalyst using the E Instruments model E1500 (or equivalent) handheld combustion gas analyzer (per Table 3, Provision 20).
	10. The Permittee shall keep daily records of the backpressure for the engine (per Table 3, Provision 18)
	11. The Permittee shall keep records of all oxidation catalyst washing and/or replacement including but not limited to, the date of replacement.
	12. The Permittee shall keep all maintenance plans and records for EU3.
3, 4, 6	13. The Permittee shall maintain onsite records including but not limited to the daily, monthly, and twelve month rolling: <ul style="list-style-type: none"> a. Run time of each emission unit; and b. biogas consumption of each emission unit (scf);
	14. The Permittee shall quantify all periods of excess emissions, even if attributable to an emergency/malfunction, startup/shutdown or equipment cleaning in the determination of annual emissions and compliance with the emission limits as stated in Table 2.

Table 4	
EU	Record Keeping Requirements
4,6	<p>15. The Permittee shall record the daily, monthly, and twelve month rolling:</p> <ul style="list-style-type: none"> a. Date, time of flare operation; b. temperature of the flare while in operation; and c. any instances of alarm due to the absence of a flame while biogas is routed to the flare.
Facility-wide	<p>16. The Permittee shall maintain records of monitoring and testing as required by Table 3.</p>
	<p>17. The Permittee shall maintain a record keeping system for these EUs to be established onsite. All such records shall be maintained up-to-date such that year-to-date information is readily available for MassDEP examination upon request and shall be kept onsite for a minimum of five (5) years. These records shall be compiled no later than the 15th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at: http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping.</p>
	<p>18. The Permittee shall keep records that include, but are not limited to, the following:</p> <ul style="list-style-type: none"> a. Compliance records sufficient to document that the actual monthly and twelve month rolling emission rates of NO_x, CO, VOC (EU 4 and EU6), total PM, SO₂, and H₂S from each EU are in compliance with the emission limitations contained in Table 2 above. Such records shall include, but are not limited to, the daily, monthly, and twelve month rolling biogas consumption rates for each applicable EU, emissions test results, monitoring equipment data and reports, and hours of operation. b. Maintenance: A record of routine maintenance activities performed on the EUs and their monitoring equipment including, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed. c. Malfunctions: A record of all malfunctions of these EUs and their monitoring equipment and the SCADA system including, at a minimum: the date and time the malfunction occurred; a description of the malfunction and the corrective action taken; the date and time corrective actions were initiated; and the date and time corrective actions were completed and the equipment was returned to compliance.
	<p>19. The Permittee shall maintain a copy of all sound survey results onsite.</p>
	<p>20. The Permittee shall keep a log of any noise and/or odor complaints received by the facility documenting the date/time, name/contact information of the person making the complaint (if given), nature of the complaint, weather conditions (e.g. including sunny/rainy, daytime/nighttime, wind speed and direction), possible cause, and resolution.</p>
	<p>21. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) and PCD(s) approved herein onsite.</p>
	<p>22. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.</p>
	<p>23. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request. The Permittee shall maintain records required by this Plan Approval onsite for a minimum of five (5) years.</p>

Table 4	
EU	Record Keeping Requirements
Facility-wide	24. In accordance with 310 CMR 7.71 (6) (b) and (c), the Permittee shall keep onsite at the facility documents of the methodology and data used to quantify emissions for a period of 5 years from the date the document is created. The Permittee shall make these documents available to MassDEP upon request. (State Only Requirement).

Table 4 Key:

EU = Emission Unit Number	PCD = Pollution Control Device
SOMP = Standard Operating and Maintenance Procedure	USEPA = United States Environmental Protection Agency
SSO = Source separated organics	MassDEP = Massachusetts Department of Environmental Protection
DAF = Dissolved air flotation	scf = standard cubic foot
H ₂ S = hydrogen sulfide	% = percent
SCADA = supervisory control and data acquisition	

Table 5	
EU	Reporting Requirements
3	<ol style="list-style-type: none"> 1. The Permittee shall submit a compliance stack test protocol for the required initial and subsequent compliance testing to MassDEP's WERO for review and approval at least 30 days prior to the scheduled commencement of said testing. 2. The Permittee shall submit the initial emission test results report and all subsequent emission tests to WERO for review within 60 days of the completion of any required compliance stack testing.
Facility-wide	<ol style="list-style-type: none"> 3. The Permittee shall submit a sound survey protocol for the required initial compliance test to MassDEP's WERO for review and approval at least 30 days prior to the scheduled commencement of said survey. 4. The Permittee shall submit sound survey results to MassDEP's Western Regional Office (WERO), in writing, attention BAW Permit Chief, within 60 days of the commencement of continuous operation of these EUs. 5. The Permittee shall notify WERO, in writing, within 14 days of commencement of continuous operation of the Facility. 6. The Permittee shall submit all notifications and reporting, including those required and those not specified by this Approval, to: Department of Environmental Protection/Bureau of Air and Waste 436 Dwight Street Springfield, Massachusetts 01103 ATTN: BAW Permit Chief Phone: 413-784-1100 Fax: 413-784-1149

Table 5	
EU	Reporting Requirements
Facility-wide	7. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a “Responsible Official” as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	8. The Permittee shall notify the Western Regional Office of MassDEP, BAW Section Chief by telephone: 413-755-2115, email: marc.simpson@state.ma.us, or fax : 413-784-1149, as soon as possible, but no later than three (3) business days after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to Section Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	9. The Permittee shall report every three years to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form.
	10. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30-days from MassDEP’s written request.
	11. In accordance with 310 CMR 7.71(5)(a)2., the Permittee shall report and certify direct emissions of greenhouse gases for the previous calendar year in accordance with 310 CMR 7.71(5) through (7). (State Only Requirement).

Table 5 Key:

EU = Emission Unit Number
MassDEP = Massachusetts Department of
Environmental Protection
WERO = Western Regional Office
BAW =Bureau of Air and Waste

CMR = Code of Massachusetts Regulations
H₂S = Hydrogen sulfide
SOMP = Standard Operating and Maintenance
Procedures

4. **SPECIAL TERMS AND CONDITIONS**

A. The Permittee is subject to, and shall comply with, the Special Terms and Conditions as contained in Table 6 below:

Table 6	
EU	Special Terms and Conditions
1	1. The Permittee shall ensure that the odor control blower fan is in operation during any tank filling activities.
	2. The Permittee shall minimize the amount of time that the lid to the receiving tank and inlet to the solids addition chute is left open.
	3. In addition to operator training, the Permittee shall install a placard at EU1 describing unloading procedures.
	4. The Permittee shall store materials for spill clean-up near EU1.
	5. The Permittee shall keep replacement CC-IPH Pelletized Impregnated Carbon Media activated carbon (or equivalent) onsite at all times to ensure continuous odor control of the receiving tank.
1, 2	6. The Permittee shall develop a SOMP for the Continental Carbon Deep Bed Scrubber Model CCGVPC500IPHM (or equivalent) activated carbon system and the ferric chloride/ferric hydroxide H ₂ S control systems within 120 days of startup of the anaerobic digester system. This plan shall be kept up-to-date, onsite and, at a minimum, include the following information: <ul style="list-style-type: none"> a. Location and specifications of each system, including materials of construction; b. A description of how each system will be operated and maintained, including a schedule for routine maintenance and material replacement; c. Key operating parameter value(s) or range(s); d. A description of how each system's key operating parameters will be monitored and recorded and how corrective actions will be performed; e. A description of any periodic sampling or testing performed on each system; f. A description of how any system malfunctions will be reported to the MassDEP.
3	7. The Permittee shall install on EU3 a DCL America, Inc. carbon monoxide catalyst model DC68-16 CC (or equivalent) capable of controlling carbon monoxide emissions by a minimum of 95% and formaldehyde emissions by a minimum of 85%. The oxidation catalyst shall operate at all times that EU3 is operating.
	8. The Permittee shall replace the DC68-16 CC (or equivalent) oxidation catalyst within 10 business days if, through Table 3 monitoring, the oxidation catalyst CO control efficiency is determined to be below 85%.
	9. The Permittee shall install an Extreme Grade Model #A201-7100 silencer manufactured by GT Exhaust (or equivalent) upon installation of EU3.

Table 6	
EU	Special Terms and Conditions
3	10. The Permittee shall house EU3 in a prefabricated, acoustically-treated enclosure designed for sound mitigation. The Permittee shall ensure that the building enclosure air inlet and exhaust are fitted with acoustic louvers.
	11. The Permittee shall maintain EU3 in accordance with the manufacturer's recommendations and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions.
	12. The Permittee shall fire EU3 on digester (EU3) biogas exclusively.
	13. The Permittee shall operate and maintain EU3 to achieve the emission standards as required in Table 2 over the entire life of the engine.
	14. The Permittee shall, in the event that EU3 is rebuilt or undergoes major repair or maintenance as defined in 40 CFR 94.11(a), conduct subsequent performance testing as detailed in 40 CFR 60.4244.
	15. The Permittee shall contract the maintenance and servicing of the CHP engine to ensure that a full inventory of spare parts for the CHP engine shall be kept onsite or at an offsite location for use within two hours of the facility.
3, 4, 6	16. The Permittee shall develop a SOMP for the CHP and flare system within 90 days of startup. The Permittee shall operate the CHP and flares consistent with the Final SOMP and the conditions/parameters established during the initial compliance test. The final SOMP shall include operating procedures for periods of start-up and shut-down.
4, 6	17. The Permittee shall operate and maintain each flare in accordance with the manufacturer's recommendations and in a manner consistent with good air pollution control practice for minimizing emissions.
	18. The Permittee shall install a shroud/visibility shield on each flare to minimize flame visibility and to stabilize the flame.
	19. The Permittee shall notify MassDEP of any complaints received relative to the flare, documenting the date/time, name/contact information of the person making the complaint (if given), nature of the complaint, possible cause, and resolution.
	20. The Permittee shall design the back-up flare (positioning, etc.) and/or otherwise equip the flare to provide protection to raptors. Specifications shall be included in the facility's SOMP document (Provision 16, above).
Facility-wide	21. This Plan Approval #WE-16-012 supersedes the Conditional Approval #WE-14-025 issued to the Permittee on March 6, 2015 in its entirety.
	22. The Permittee shall keep a full inventory of spare parts, as listed in the SOMP, for the entire anaerobic digestion facility either onsite or at an offsite location within two hours travel time of the facility.

Table 6 Key:

EU = Emission Unit Number
WERO = Western Regional Office
CFR = Code of Federal Regulations
USEPA = United States Environmental Protection
Agency
H₂S = Hydrogen Sulfide

MassDEP = Massachusetts Department of
Environmental Protection
BAW = Bureau of Air and Waste
SOMP = Standard Operating and Maintenance
Procedures

- B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including, but not limited to, rain protection devices known as “shanty caps” and “egg beaters.”
- C. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

Table 7				
EU	Stack Height Above Ground (feet)	Stack Inside Exit Dimensions (feet)	Approximate Stack Gas Exit Velocity (feet per second)	Approximate Stack Gas Exit Temperature (°F)
3	21	1.0	64.9	350
4	12	0.5	65.6	1,832
6	12	0.5	65.6	1,832

Table 7 Key:

EU= Emission Unit Number

°F = Degree Fahrenheit

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.

- J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain “Fail-Safe Provisions,” which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Amy Stratford by telephone at 413-755-2144, or in writing at the letterhead address.

This final document copy is being provided to you electronically by the
Department of Environmental Protection. A signed copy of this document
is on file at the DEP office listed on the letterhead.

Marc Simpson
Section Chief
Bureau of Air and Waste

Enclosure

ecc: MassDEP/Boston - Yi Tian
Michael T. Lannan, P.E., Tech Environmental, Inc.